

COSMOPOLITAN CHRONICLE

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Tools and Materials, Now and Then.. Part 3

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Although many tools have been improved or invented recently, the fundamental tools of the carpenter have been used for centuries: the hammer, chisel, saw, square, level, measuring device, drill, and plane. The hammer: Multi-purpose hammerstones have been used for millions of years, and there is no doubt the hammer was the first tool used by humans. In California, hammerstones for making other chipped stone tools, and for pulverizing meat and plants, have been around for at least 12,000 years.

Around the fourth century B.C., wooden handles were added to hammers. Handles were initially tied to the head, and much later a hole was bored into the head to secure it to the handle. The hammer has evolved through the Stone Age, Bronze Age, and Iron Age to today's alloys. There are over 250 types of hammers in production today.

Carpenters during the time of both Bandini, and Seeley, also commonly used a mallet—a hammer with a wooden head—

for use with chisels, and driving in trunnels (wooden pegs or dowels, literally meaning “tree nail.”) Trunnels were used in ship building, and mortise and tenon joints

The chisel is almost as old as the hammer. Early chisels made out of flint dating back 10,000 years have been discovered. As hammers are often used jointly with chisels, it is not surprising they evolved together, made of the strongest materials available.

The saw is so important that both the ancient Greeks and Chinese had a hero accredited with its invention. The hand saw as we know it today, i.e., a non-

backed steel serrated blade with a wooden handle, was introduced in the 1600s. Today's saws are almost identical to the ones used to build Bandini's home, and during the construction of the Cosmopolitan.

The square is another very old tool of extreme importance. A military formation described in a fourth century B.C. Chinese military manual, is called “carpenter's square formation.” The square was used in all areas of the ancient world, just as it is today. As the right angle of the square gives it its importance, great care has always been exercised in its use and storage.

The laser level coming into its own today was obviously not available to carpenters in the 19th century. But the “spirit level” a glass tube with a bubble in it, attached to a very straight piece of wood may have been. There are many ways to find level. One of the earliest and simplest is a bowl filled with water. Another early method is an A-frame level, which has a weight attached with a string at the apex of the A, and lines up to marks on the cross piece. A-frame levels were used from ancient times to the mid 1800s. Both Bandini's and Seeley's builders may have employed them.

